

CLAIMS

What is claimed is:

1. A moldable resin for use in a molding process to form a molded part at least partially therefrom, the moldable resin comprising:
 - a base resin;
 - a plurality of shape memory alloy (SMA) particles interspersed in said base resin; and
 - wherein said SMA particles are suspended in said base resin and serve to enhance a specific property of said base resin.
2. The moldable resin of claim 1, wherein said SMA particles comprise NITINOL[®] alloy particles.
3. The moldable resin of claim 1, wherein said SMA particles are less than about 1% of a total volume of said resin.
4. The moldable resin of claim 1, wherein said SMA particles comprise between about 1% and 50% by volume of said resin.
5. The moldable resin of claim 1, wherein said SMA particles comprise at least about 50% by volume of said resin.
6. The moldable resin of claim 1, wherein said SMA particles comprise SMA particles in their austenitic phase.
7. The moldable resin of claim 1, wherein said SMA particles comprise SMA particles in their martensitic phase.
8. The moldable resin of claim 1, wherein said SMA particles comprise a mixture of SMA particles in martensitic and austenitic phases.

9. The moldable resin of claim 1, wherein said base resin comprises a thermoplastic resin.

10. The moldable resin of claim 1, wherein said base resin comprises a thermosetting resin.

11. The moldable resin of claim 1, wherein said resin is suitable for use in injection molding and compression molding processes.

12. The moldable resin of claim 1, wherein said SMA particles are formed in at least one of the group of shapes comprising: spherical, cylindrical and oval.

13. The moldable resin of claim 1, wherein said SMA particles comprise granules intermixed within said base resin.

14. The moldable resin of claim 1, wherein said SMA particles comprise a size of between about 0.005 micron to about 50 micron.

15. The moldable resin of claim 1, wherein said SMA particles comprise a size of at least about 50 microns.

16. The moldable resin of claim 1, wherein said SMA particles comprise a size of no more than about 0.005 micron.

17. A moldable resin for use in an injection molding process to make an injection molded part, the moldable resin comprising:

a base resin comprised of one of a thermoplastic or thermosetting plastic resin; and

a plurality of shape memory alloy (SMA) particles added to the base resin to enhance a property of said base resin.

18. The moldable resin of claim 17, wherein said SMA particles are in their austenitic phase when added to the base resin.

19. The moldable resin of claim 17, wherein said SMA particles are in their martensitic phase when added to the base resin.

20. The moldable resin of claim 17, wherein said SMA particles comprise NITINOL[®] alloy particles.

21. The moldable resin of claim 17, wherein said SMA particles comprise less than about 1.0% by volume of said resin.

22. The moldable resin of claim 17, wherein said SMA particles comprise between about 1.0% to about 50% by volume of said resin.

23. A moldable resin for use in a compression molding process to make a compression molded part, the moldable resin comprising:

a base resin comprised of one of a thermoplastic or thermosetting plastic resin; and

a plurality of shape memory alloy (SMA) particles added to the base resin to enhance a property of said base resin without affecting a moldability of said base resin.

24. The moldable resin of claim 23, wherein said SMA particles comprise NITINOL[®] alloy particles.

25. The moldable resin of claim 24, wherein said NITINOL[®] alloy particles are provided in their austenitic phase when added to said base resin.

26. The moldable resin of claim 24, wherein said NITINOL[®] alloy particles are provided in their martensitic phase when added to said base resin.

27. The moldable resin of claim 23, wherein said SMA particles comprise a shape in accordance with one of the group of shapes comprising: oval, spherical and cylindrical.

28. The moldable resin of claim 23, wherein said SMA particles comprise granules added to said base resin.